README Document for Nimbus 7 THIR Film Data THIRN7IM

July 15, 2011

Version 2.0

Emily Zamkoff

Table of Contents

1.0 Introduction

Nimbus 7 was launched on October 24, 1978.

The Nimbus-7 satellite was the first global monitor of man-made and natural pollutants in the Earth's atmosphere will be made with this spacecraft in cooperation with a team of about 50 international scientists.

The objective of Nimbus-7 was to determine the physical characterization of the global atmosphere, the oceans, the ocean-atmosphere interface, and the Earth's heat balance. Experiment data was to be transmitted to Earth immediately. The spacecraft was designed and configured the same as all previous NIMBUS satellites.

NIMBUS-7 carried eight highly complex sensors which were all improved versions of sensors previously flown on NIMBUS satellites. They were a Limb Radiance Inversion Radiometer, a High Resolution Infrared Radiation Sounder, an Earth Radiation Budget experiment, a Scanning Multichannel Microwave Radiometer (SMMR), a Pressure Modulated Radiometer, a Solar Backscatter UV/Total Ozone Mapping Spectrophotometer, a Temperature, Humidity Infrared Radiometer and a Tropical Wind, Energy Conversion and Reference Level experiment.

The craft was placed in Sun-synchronous orbit and transmission of data from all of the experiments was completed as scheduled. For the first time NASA and ESA (European Space Agency) were able to receive data concerning the global atmosphere in real time.

It was launched on October 24, 1978 and was operational through 1994, although the TOMS instrument failed in May of 1993.

2.0 Image Files

The THIRN7IM data product contains scanned positives of photofacsimile 70mm film strips from the Nimbus-7. The images contain orbital nighttime (3.5 to 4.1 microns) cloud cover of the Earth's surface temperature. Each orbital swath picture is gridded with geographic coordinates and covers a distance approximately from the north pole to the south pole. The images are saved as JPEG 2000 digital files. About 7 days of images are archived into a TAR file.

The THIRN7IM images can be ordered online using the REVERB/ECHO tool. The URL is: http://reverb.echo.nasa.gov/reverb/#utf8=%E2%9C%93&spatial_map=satellite&spatial_type=rectangle&keywords=GES_DISC_THIRN7IM_V001

The image files can be viewed with any application that supports the JPEG 2000 format.